◎ 응 용 수 학 ◎
(Appl. Math)

최기헌(덕성여대)

AM-1	An adaptive sequential probability ratio test in the autoregressive process

Let $\{\varepsilon_k : k \in Z^+\}$ be a sequence of i.i.d. normal random variables with mean 0 and variance one; let $\{X_k : k \in Z^+\}$ be a stochastic process satisfying the autoregression equation

$$X_n = \theta + \rho X_{n-1} + \varepsilon_n, \qquad n \in Z^+$$

where $X_0 = 0$ and $\rho \in (-1, 1)$ is unknown; and consider the problem of sequentially hypotheses about a parameter θ in the presence of the nuisance parameter ρ. Here we consider the composite hypotheses

$$H^- : \theta = -\delta \ v.s \ H^+ : \theta = +\delta$$

where $\delta > 0$. An adaptive sequential probability ratio test(S.P.R.T.) is proposed in this paper. We can investigate to find the limiting distribution and further to computing the error probabilities and expected sample sizes in the frequentist properties of the adaptive S.P.R.T. for θ.